

CLAIM AMENDMENTS

22. (currently amended) An apparatus for subjecting a substrate to a localized liquid treatment for cleaning or etching of the substrate, said apparatus comprising:

means for holding said substrate,

a first supply system adapted to supply a liquid on a first part of the surface of said substrate,

and

a second supply system adapted to supply a gaseous substance to a second part of said substrate, the second part of the substrate adjacent to the first part which is treated by said liquid, said gaseous substance being at least partially miscible with said liquid and when mixed with said liquid yielding a mixture having a surface tension lower than that of said liquid thereby inhibiting the liquid from contacting said second part.

23. (previously presented) An apparatus according to claim 22, further comprising a rotational device wherein said rotational devices rotates the substrate around an axis which is perpendicular to said substrate, the axis being through a geometric center of said substrate.

24. (previously presented) An apparatus according to claim 23, wherein the substrate is circular shaped and has a first side and a second side, the first side having an annular edge area,

wherein the first supply system includes at least one nozzle adapted to supply a stream of liquid on the annular edge area of said substrate;

wherein the second supply system includes at least one nozzle adapted to dispense a gaseous tensio-active substance on an area of said first side adjacent to said annular edge area, the area of said first side being closer to the center of the substrate than the annular edge area; and

wherein the at least one nozzles of the first and second supply systems supply a contiguous stream of fluid.

25. (previously presented) An apparatus according to claim 24, wherein the substrate is horizontally placed.

26. (previously presented) An apparatus according to claim 24, wherein the at least one nozzles of the first and second supply systems are positionable on any location along a fixed radius of said substrate.

27. (previously presented) An apparatus according to claim 24, further comprising a nozzle adapted to direct a stream of a treatment liquid onto the entire second side of said substrate.

28. (previously presented) An apparatus according to claim 22, wherein the substrate has a geometric center, an axis which is perpendicular to said substrate at the geometric center of said substrate, a central part around the axis of the substrate and an annular edge,

wherein said first supply system includes a first annular channel adapted to supply the liquid to the entire annular edge area of the surface of said substrate,

wherein said second supply system includes a central channel adapted to supply a gaseous substance to the central part of said substrate, the central channel being coaxial with the axis of the substrate, and

wherein said second supply system further includes a second annular channel placed concentrically with respect to the first channel and closer to the geometric center of said substrate, said second channel adapted to guide the gaseous substance coming from the central part of said substrate, in order to prevent said liquid from touching said central part.

29. (previously presented) An apparatus according to claim 23, wherein the substrate has a central part around the axis of the substrate and an annular edge,

wherein said first supply system includes a first annular channel adapted to supply the liquid to the entire annular edge area of the surface of said substrate,

wherein said second supply system includes a central channel adapted to supply a gaseous substance to the central part of said substrate, the central channel being coaxial with the axis of the substrate, and

wherein said second supply system further includes a second annular channel placed concentrically with respect to the first channel and closer to the geometric center of said substrate, said second channel adapted to guide the gaseous substance coming from the central part of said substrate, in order to prevent said liquid from touching said central part.

30. (previously presented) An apparatus according to claim 28, further comprising a rotational device, wherein the rotational device rotates the apparatus around an axis which is perpendicular to said substrate and which is through the geometric center of said substrate.

31. (previously presented) An apparatus according to claim 28, wherein the substrate has a first side and a second side, and further comprising a nozzle adapted to dispense a stream of a treatment liquid on the entire second side.

32. (previously presented) An apparatus according to claim 28, further comprising a sealing device positioned between said substrate and an outer wall of said second annular channel.

33. (previously presented) An apparatus according to claim 22, wherein the substrate is circular shaped and has two sides with an annular edge and an outer rim, and further comprising: a container filled with an amount of treatment liquid so that a pressure is maintained above the surface of said amount of treatment liquid, said pressure being less than or equal to an ambient pressure, said container having a narrow gap in one side, into which said circular substrate is partially inserted, so that at least a portion of said annular edge and said outer rim of said substrate is immersed in said liquid,

at least one pair of nozzles, one nozzle of said pair on each side of said substrate, directing a stream of a gaseous substance at a border area between said container and said substrate.

34. (previously presented) An apparatus according to claim 23, wherein the substrate is circular shaped and has two sides with an annular edge and an outer rim, and further comprising: a container filled with an amount of treatment liquid so that a pressure is maintained above the surface of said amount of treatment liquid, said pressure being less than or equal to an ambient

pressure, said container having a narrow gap in one side, into which said circular substrate is partially inserted, so that at least a portion of said annular edge and said outer rim of said substrate is immersed in said liquid,

at least one pair of nozzles, one nozzle of said pair on each side of said substrate, directing a stream of a gaseous substance at a border area between said container and said substrate.

35. (previously presented) An apparatus according to claim 33, wherein the substrate is positioned in a horizontal plane

36. (previously presented) An apparatus according to claim 33, further comprising a rotational device, the rotational device rotating the container around an axis which is perpendicular to said substrate, the axis being through a geometric center of said substrate.

37. (previously presented) An apparatus according to claim 22, wherein said first supply system includes a central channel used to supply a stream of liquid to the surface of said substrate and a second channel, concentrically surrounding the first channel, and draining said stream of liquid from the surface of said substrate; and

wherein said second supply system includes a third channel, concentrically surrounding the second channel and used to supply a stream of a tensio-active substance to the substrate surface.

38. (previously presented) An apparatus according to claim 37, wherein the substrate is positioned in a horizontal plane.

39. (previously presented) An apparatus according to claim 37, wherein the second supply system further comprises a fourth channel, the fourth channel being concentrically placed with respect to said third channel, the fourth channel being used to drain said gaseous tensio-active substance from the substrate surface.

40. (previously presented) An apparatus according to claims 37, further comprising a sealing device, the sealing device positioned between said substrate and an outer wall of said second channel.

41. (previously presented) An apparatus according to claim 39 further comprising sealing devices, the sealing devices positioned between said substrate and an outer wall of said second channel and between said substrate and an outer wall of the apparatus.

42. (previously presented) An apparatus according to claim 41 wherein the outer wall of the apparatus is an outer wall of the fourth channel.

43. (previously presented) An apparatus according to claim 41 wherein the outer wall of the apparatus is an outer wall of the third channel.

44. (previously presented) An apparatus according to claim 22,
wherein the first supply system includes a central channel, the central channel containing an amount of a liquid such that said liquid is in contact with the surface of said substrate, and that a

pressure is maintained above a surface of said amount of liquid, said pressure being less than or equal to an ambient pressure on the substrate surface, and

wherein said second supply system includes a second channel, the second channel concentrically surrounding the central channel, and supplying a stream of a gaseous tensio-active substance on the surface of said substrate.

45. (previously presented) An apparatus according to claim 44, wherein the substrate is positioned in a horizontal plane.

46. (previously presented) An apparatus according to claim 44, wherein the second supply system further comprises a third channel, the third channel concentric with respect to the second channel, the third channel being used to drain said gaseous tensio-active substance from the substrate surface.

47. (previously presented) An apparatus according to claim 44, further comprising a sealing device, the sealing device positioned between the substrate and an outer wall of the central channel.

48. (previously presented) An apparatus according to claim 46, further comprising sealing devices, the sealing devices being positioned between the substrate and an outer wall of the central channel and between the substrate and an outer wall of the third channel.